

West Virginia University
College of Engineering and Mineral Resources

MECHANICAL AND AEROSPACE ENGINEERING

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It's been a while since we mailed our previous newsletter.

The past two years brought many changes to our department, changes that kept us very busy. Gene Cilento, former Chair of Chemical Engineering, became Dean of the College. Don Lyons, former Chair of MAE, stepped down on December 31, 2001 to become Director of the Alternative Fuels, Engines, and Emissions Research Center. Gary Morris served as Interim Chair during Spring 2002 and Ever Barbero assumed the position of permanent Chair of MAE at the onset of the summer term.



WVU'S LATEST BUILDING BOOM

Waterfront Place is an office complex housing many administrative offices of the university. A hotel and conference center is being added. The complex is located in the newly developed Morgantown's Wharf District. One Waterfront Place houses the WVU Visitors Resource Center which is open year-round. Student guides can give you a walking/driving tour of WVU or even take you inside a residence hall and a classroom (1-800-344-9881, ext. 2).

The new \$34 million WVU Student Recreation Center ranks among the top 10 in the nation. It is located in the Evansdale Campus, downhill from the Engineering Sciences Complex. This 177,000 square foot facility offers the equipment and programs that students requested—17,000 square feet of weight and fitness equipment and a variety of fitness and wellness programs. A 50-foot

climbing wall; a leisure pool; fitness pool; whirlpool; outdoor recreation programs; basketball, volleyball, badminton, racquetball and squash courts; and elevated jogging track and more are available to students.

A new library with 124,000 square feet in five floors now joins the Wise Library on the Downtown Campus. Technology is what sets this new library apart from what you would expect. It has 180 computers, 35 media-equipped workstations and 32 wireless laptops, with connections provided on all floors. A multimedia floor with group study rooms, including 42-inch HDTV with Internet access, opens the library to e-conferences. The library can broadcast live video, network news, and digitized video archives from its web site.

ACADEMY OF DISTINGUISHED ALUMNI INDUCTS NEW MEMBER

The Academy of Distinguished Alumni of Mechanical Engineering and Mechanics. was

pleased to induct Dr. Robert D. Snyder in April of 2002.

Dr. Snyder was born in Lancaster, PA. He is married to Rose Perez and has three children. He received his BSME degree from Indiana Institute of Technology in 1955, his MSME in 1959 from Clemson University, and his PhD in Theoretical and Applied Mechanics from WVU in 1965. He also spent one-and-a-half years as an NSF Science Faculty Fellow at Brown University in 1960-61.

Dr. Snyder started his full-time academic career as an assistant professor of engineering mechanics at Clemson in 1959. Upon completing his PhD at WVU, Dr. Snyder joined the WVU Department of Theoretical and Applied Mechanics as an associate professor in 1965 and was promoted to the rank of full professor in 1968. From 1970-75 he served as the Associate Chair for Graduate Studies in the Department of Mechanical Engineering and Mechanics at WVU.

He left WVU in 1975 to become Chair of the Department of Engineering Science, Mechanics

and Materials at the University of North Carolina, Charlotte. As Chair, he developed proposals for a co-op program at the undergraduate level and an industry-oriented master's program in engineering. He was named Dean of the William States Lee College of Engineering at UNC Charlotte in 1977, a post he held until his retirement in December 1999.

Dr. Snyder is a registered Professional Engineer in the state of North Carolina. He is a member of several professional organizations including the ASME and ASEE. He has graduated a number of master's and doctoral students. He has co-authored several textbooks and is the author of many technical publications. Dr. Snyder recently received a distinguished service award from the Society of Professional Engineers of North Carolina and an Outstanding Engineer Award from the North Carolina Society of Engineers.

GRADUATE STUDENT AWARDS



Ms. Dong Hee Kim received the 2002 North America Student Paper Award from Fluent Inc. for her paper Prediction of Nucleation and Coagulation Modes in the Formation of Diesel Particulate Matter, based on her PhD dissertation.

Mr. Padha Srinivasan received first place award on the 2002 IEEE North American Power

Symposium for his paper Proton Exchange Membrane Fuel Cell Dynamic Model for Distributed Generation Control Purposes.

Mr. Travis Shultz won third place in the 2002 ASME international student paper competition, bioengineering division. Travis recently graduated with a MSME. He is currently an assistant professor at Fairmont State College, School of Engineering Technology, Fairmont, West Virginia.

UNDERGRADUATE SCHOLARSHIPS

MAE is fortunate to have endowments for several Undergraduate Scholarships created by generous alumni and friends. Each of these scholarship award \$800 annually with one exception.

The Benjamin H. Ulrich, Jr. Scholarship is funded by alumni and friends of Benjamin Ulrich, former professor of Aerospace Engineering. It is awarded to an Aerospace Engineering student. The 2002-

2003 academic year recipient of this award is Charles E. Battleson, Senior.

The Carl H. Cather Scholarship is funded by the family and friends of Carl H. Cather, former professor and chair of Theoretical and Applied Mechanics. It is awarded to Mechanical Engineering juniors or seniors in the top 25% of the class who have financial needs. The 2002-03 academic year recipients of this award are John Ross, Junior; and Jared Hartsell, Senior.

The Donald T. Worrell Scholarship is funded by alumni and friends of Donald T. Worrell, former professor of Mechanical Engineering and Mechanics. It is awarded to a Mechanical Engineering student based on financial need and academic performance with a preference to West Virginia residents. The 2002-03 academic year recipient of this award is Aaron M. King, Senior.

The Hansen, Inc. Scholarship is funded by the William Stucki Hansen Foundation. It is awarded to juniors, seniors, or graduate students majoring in Mechanical Engineering. The 2002-03 academic year recipients of this award are Michelle Felice, Senior; and Kenneth A. Williams, Junior.

The Harold M. Cather Scholarship is funded by the estate of Harold M. Cather, former professor and chair of Mechanical Engineering. It is awarded to U.S. citizens who have a superior (3.0 GPA) academic standing. First priority is given to Mechanical Engineering majors with a financial need. The 2002-03 academic year recipients of this award are Michelle Lechliter, Junior; Thomas McConnell, Junior; and Andrew Zimmerman, Sophomore.

The Jerome B. Fanucci Scholarship is funded by family, alumni, and friends of Jerome Fanucci, former professor and chair of Aerospace Engineering. It is awarded to Aerospace Engineering students. The 2002-03 academic year recipients of this award are Jonathan Osborne,

Junior; Brian Rabbitt, Junior; Brianne Williams, Junior; and Jennifer Hazelton, Senior.

The Leon Z. Seltzer Scholarship is funded by alumni and friends of Leon Seltzer, former professor and chair of Aerospace Engineering. It is awarded to an Aerospace Engineering student. The 2002-03 academic year recipient of this award is Andrew Slezak, Senior.

The Richard E. Walters Scholarship is funded by the family and friends of Richard E. Walters, former professor of MAE. It is awarded to a student majoring in Aerospace Engineering. The 2002-03 academic year recipient of this award is Dave Jayasinghege, Senior.

The Allied Weight Engineers Scholarship is funded by the Society of Allied Weight Engineers. It is awarded to a student who demonstrates high academic promise and financial need.

The Nathan Ness Scholarship is funded by the family of Nathan Ness, a Professor Emeritus of MAE.

FACULTY AWARDS. Ismail Celik was selected as one of only three professors throughout WVU to receive the 2002 Benedum Distinguished Scholar Award. The Benedum Award recognizes faculty for sustained excellence in research, scholarship, and creative endeavors. This is one of the most prestigious research awards available at WVU. Dr. Celik's work in computational fluid dynamics is recognized internationally as being world-class research. Dr. Celik is a Professor in MAE.



GRADUATE SCHOLARSHIPS

The MAE Department provides only a few scholarships for graduate students, which limits our ability to recruit outstanding PhD candidates. While our MS program is very popular, we would like to offer more scholarships for the PhD program.

The 2001-2002 academic year concluded with 20 MS, and 8 PhD graduates in Mechanical and Aerospace Engineering. Every year, we are able to recruit about six or seven graduate students using Graduate Teaching Assistant (GTA) funds provided by the college. In addition, we make about six or seven offers of Graduate Research Assistant (GRA) positions, based on research needs anticipated by our faculty. The number of GRA positions that we can offer in advance to attract outstanding students is very small, as compared with the number of Graduate Research Assistant positions that are eventually funded on research contracts – about 100 at this time.

Every year we are able to supplement the graduate assistantships of a few outstanding students with funding of about \$2000/year, from two internal resources:

The Endowed Graduate Supplemental Fellowship provides a \$2000 annual supplement for outstanding PhD candidates who undertake responsibilities that support undergraduate teaching in the department. In the 2002-03 academic year, this fellowship was awarded to Mr. Tom Damiani and Mr. Brad Seanor.

The HERF Supplemental Fellowship provides a \$2000 annual supplement to outstanding M.S. or Ph.D. students who have contributed significantly to the instruction of undergraduate courses. In the 2002-03 academic year, this fellowship was awarded to Mrs. Sri Vani Motamari.

Other resources of financial support within the WVU system include:

The Swiger Fellowship provides a one-year stipend of \$15,000 to outstanding Ph.D. students in any area of engineering who are U.S. citizens, and fulfill responsibilities related to undergraduate instruction.

The DuBois Fellowship provides an 9-month stipend of \$11,250 to qualified, full-time African American graduate students in any area of engineering.

Furthermore, travel funds of up to \$400 per year are provided by the college to qualified Ph.D. students. Other nationally competitive fellowships include NSF Research Fellowships, ASME Graduate Teaching Fellowships, as well as scholarships restricted to certain minority groups, such as the Amelia Earhart Fellowship Award for Women.

FACULTY AWARDS. Mridul Gautam, was named 2002 CEMR



Researcher of the Year. This is the top research award in the college. A committee first selected five

Outstanding Researchers in the college. Then, external reviewers are used to select the Researcher of the Year. Mridul Gautam is an international leading expert on Gas-Particle Flows, Characterization and Control of Exhaust Emissions, and Fluid Dynamics. Dr. Gautam is a Professor in the Department.

ALUMNI NEWS

In this section we want to include NEWS about MAE alumni. We are very proud of your accomplishments and we want to share them with the remaining 2400 alumni in our list. If you have some NEWS about yourself or other MAE alumni, please let us know. You can write us (our complete address is on the back page) or send us e-mail at ebarbero@wvu.edu

We never seem to catch up with all of our alumni. Our database is incomplete and the contact information changes often. We need your help to update our records. Simply visit us on the web at www.mae.cemr.wvu.edu and fill in the web form www.cemr.wvu.edu/alumni/address-update.php

FACULTY AWARDS. Larry Banta was named a 2002 WVU Foundation Outstanding Teacher. Each year, the WVU Foundation selects six



faculty members from the University's 1,300 full-time professors. The award is based on demonstrated effectiveness and creativity in teaching over a multi-year period. Dr. Banta is an Associate Professor and Associate Chairman of the Department.

OBITUARIES

William James Snyder, BSAE 1965, died of pancreatic cancer, Saturday, November 16, 2002, at home in Battle Ground, WA. He was 60 years old. Mr. Snyder was retired, previously employed by the National Aeronautics and Space Administration for 35 years, as an aerospace engineer, researching helicopters and coordinating the civil helicopter program throughout the NASA Centers. He was Branch Chief of the Advanced Tiltrotor Technology Transfer Branch at NASA-Ames Research Center at the time of retirement. He received the NASA Medal for Outstanding Leadership and contributions in the field of advanced civil rotorcraft in 1994. He was an active member of the American Helicopter Society for over 35 years and was awarded an Honorary Fellowship in the American Helicopter Society in 1997. Bill was born May 4, 1942, in Wheeling, WV. He graduated from West Virginia University in aerospace engineering in 1965. He was happily married to his wife, Wanda, for 40 years. His family lived in Newport News, VA, for 13 years, then Fremont CA, for 20 years, prior to moving to Brush Prairie, WA, in 1997. They had moved to their current home in Battle Ground, WA in July 2002.

Survivors include his wife, Wanda; one daughter, Mrs. Stephen (Karen) Abarr and one grandson, Adam Abarr, of Battle Ground; two sisters, Mrs. Charles (Susan) Rine, Mrs. Dale (Debra) Miller of Florida; five nephews: William Graham, James Graham, of Indiana, John Rine of Florida, Jay Rine of North Carolina, Jonathan Reeve of Florida and two nieces, Melissa Miller and Michelle Miller of Florida.

Rickey Charles Smutko II, BSME 2001, was killed Aug. 5, 2002 in a construction accident in Greensboro, NC. Rickey had just gotten his first job in engineering designing, drafting, and installing water sprinklers. It was his seventh day in the job when an 80,000 lb concrete wall fell killing him and two other men. Rickey was born July 25, 1978 to Rick and Shirley Smutko of Jeffrey, WV. He is also survived by his fiancée Wendy Ingram and her daughter, Sierra, of Germantown, NC, sister Jessica Dolin and brother-in-law Jeremy Dolin of South Charleston; paternal grandparents, Jim and Frances Smutko of Jeffrey; maternal grandparents, Brady and Arzettie Fowler of Champmanville; and Randall Fowler, his best friend and cousin.

LABORATORY RENOVATIONS

Bernard Judy, BSME graduate 1945, designated \$1.3 million of his estate to MAE for capital improvements. We are investing his extraordinary contribution to renovate the East Wing of the Engineering Science Building, to become the Bernard Judy Wing. As you will remember, that area included the old thermo-fluid laboratory. A new air conditioning system will provide central air to the wing. A new interior wall will enclose the big laboratory and allow us to open an East entrance to ESB facing parking lot 40 and the Engineering Research Building. About 8,000 square feet comprising 10 rooms will have new ceiling, lighting, floor tile, paint, state-of-the-art data and power access as well as central air.

About half of the Bernard Judy donation has been set up in an endowment that will provide funds for maintenance of the teaching laboratories in

perpetuity. About one-fourth is being used for renovations. WVU and CEMR are matching the renovation cost about dollar for dollar. The remaining one-fourth is being used to purchase new equipment for the following laboratories to be located in the Bernard Judy Wing:

- Mechatronics and Instrumentation
- Dynamics and Strength
- Thermo-fluids
- Automotive Technology
- Aircraft Simulation
- Design

Obviously, the cost of furnishing all these laboratories with modern equipment far exceeds the \$300,000 or so available. It is for this reason that fundraising for teaching laboratory equipment is among our top priorities.

STUDENT PROJECTS/ACTIVITIES

15th Annual Pumpkin Drop. The West Virginia University Student Chapter of the American Society of Mechanical Engineers (ASME) sponsored the 15th Annual Pumpkin Drop at the Engineering Sciences Building, Evansdale Campus, on Friday, October 25, 2002. The Chapter faculty advisor is Dr. John Kuhlman. The winning teams of this year's event are: 1st Place - St. Francis Catholic School, Morgantown, WV, Vincent DeGeorge, Corey Jones, Matt Gutta, Riley Dunn. 2nd Place - Morgantown Learning Academy, Morgantown WV, Tessa Wiegand, Brian Robinson, Nick Connelly, Anna Driver. 3rd Place - Frazier High School, Perryopolis PA, Benjamin Kokoszka.

Future Truck. West Virginia University's modified Ford Explorer, the Exclaim!, placed sixth overall during the 2002 FutureTruck competition, a contest that is helping redefine how industry, government, and academia can

work together to develop more energy-efficient and "greener" automotive technologies for SUV's and light-duty trucks.

FACULTY AWARDS. Marcello Napolitano, received the MAE Academy Teaching Award. Dr.



Napolitano, Professor, joined the Department in 1990. He excels in the fields of aircraft stability and control, flight mechanics, flight control systems, and neural network applications. Dr. Napolitano is a Professor in the Department.

At the Ford proving grounds in Yucca, Arizona, and the California Motor Speedway, in Fontana, Calif., WVU and 14 other schools from the U.S. and Canada met to test their re-engineered Ford Explorers. Temperatures in excess of 100 degrees challenged the vehicles' cooling strategies in the Arizona desert. WVU finished first in two categories, garnering the Best Off-road Performance award with perfect score of 50/50, and receiving recognition for Best Skit at an informal evening. The Mountaineers also finished a close second in the Lowest Greenhouse Gas Emission category-one of the most critical objectives of the competition. WVU's pioneering work on Selective Catalytic Reduction paid off by cutting oxides of nitrogen emissions in half.

WVU Hosts All-Terrain Vehicle Competition.

Between 450 and 500 college students from the eastern U. S., Canada, Mexico and Puerto Rico converged on Morgantown in May when WVU hosted an all-terrain vehicle competition.

About 50 schools participated in the Mini Baja East at Chaplin Hill Anker Fields, said Ken Means, MAE professor and faculty advisor for WVU's team. This is the fourth time WVU has been the host for the competition, which is sponsored by the Society of Automotive Engineers.

"WVU was proud to be the host school for the competition," Dr. Means said. "In the past, both SAE and the competing schools have enjoyed the way WVU runs the competition. It also gave us a chance to show off West Virginia. Early May is a very nice time to visit the area, and the site for this year's competition is a beautiful setting."

WVU has been participating in Mini Baja since the early 1980s, winning four times and usually finishing in the top 10.

For the first time, the competition included a live Web broadcast courtesy of West Side Telecommunications.

DONOR RECOGNITION

In this section we wish to recognize those individuals and corporations that through their generosity have an indelible impact on the life of students in MAE. This list is a work in progress

that we started during the summer of 2002 and it is therefore incomplete. Our apologies to those that have been omitted inadvertently. At this time we wish to recognize the following:

ASEE Inc
Ravi K. Bahl
Larry Banta
George E. Booth, Sr.
David Bungard
Hsi Frank Chou
Robert J. Cochenour
Charles W. Collins
Vincent S. Dimsa, Jr.
Ergon-WV, Inc.
Gary Lee Forman
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Thomas R. Long
James P. Loretta
Lubrizol Foundation
Daniel J. Marinacci
Robert D. Mills
Frank M. Offutt
Gina M. Newhouse
John E. Olashuk, Jr.
Harold Ray Payne

Scholarships have great impact on the life of students and the quality of the programs offered in MAE. If you or anyone you know is interested in establishing a new Scholarship Endowment or contributing to an existing scholarship in Mechanical and Aerospace Engineering, please contact Bob Bragg, CEMR's Director of Development at 304-293-4821 ext. 2240 or Robert.Bragg@mail.wvu.edu.

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WVU is in the midst of the Building Greatness Campaign: West Virginia University. The College of Engineering and Mineral Resources has as its goal \$22.5 million. To reach such an ambitious goal involves great effort on part of all faculty in MAE. By reaching this goal, we have the potential to elevate our Department to a new level. As we have explained throughout this newsletter, our fundraising objectives are:

- An endowment to support student projects, such as those described in this newsletter.
- Funds for purchase and maintenance of laboratory equipment.
- An endowment to provide needy students with support for purchase of technology required for engineering education, such as laptops, etc.
- Opportunity funds that will enable the department to take advantage of opportunities in faculty and student recruitment and retention, high payoff projects, venture projects and so on.
- Endowed Scholarships.

If you or anyone you know is interested in contributing to the Building Greatness Campaign, specifically for Mechanical and Aerospace Engineering, please contact Robert Bragg, CEMR's Director of Development, at 304-293-4821 ext. 2240 or Robert.Bragg@mail.wvu.edu. Please mention this newsletter and your intention of contributing funds for Mechanical and Aerospace Engineering.

Thank you for your continued support!